

Title (en)

Apparatus for removing contaminants in reactors

Title (de)

Vorrichtung zur Entfernung von Verunreinigungen in Reaktoren

Title (fr)

Appareil pour l'élimination d'impuretés dans un réacteur

Publication

EP 1433510 A1 20040630 (EN)

Application

EP 03029297 A 20031222

Priority

US 32841102 A 20021223

Abstract (en)

The present invention relates to an urea hydrolysis reactor (10) with a heater (12) submerged in the liquid phase (14) of the reaction mixture. Aqueous urea (18) is fed to the reactor (10), and a pressurized gas phase stream (20) that includes ammonia, carbon dioxide, and water is drawn off at the top of the reactor (10), controlled by a valve (22) and monitored by a pressure sensor (24). In this embodiment, adapted to remove a contaminant that tends to concentrate at a top layer (28) of the liquid phase (14) of the reaction mixture as shown, at least a portion of the top layer (28) is decanted through a pipe (30) and fed to a separation means (32). The separation means (32) preferably is a physical separation means, for example including one or more of a vessel, a strainer, a (25) filter, a centrifuge, and the like. In this embodiment, a contaminant is discarded through pipe (34), a stream of recovered reactants and/or catalyst is recycled via a pump (38) on a pipe (40) to combine with the aqueous urea feed (18) to the reactor (10), and a gas phase fraction is recycled via a pipe (42) back to the reactor, preferably to gas phase region (44). Optionally, but preferably, the reactor (10) includes a temperature sensor (48) and a level meter (50).

IPC 1-7

B01D 19/02; **B01D 21/00**; **C01C 1/08**; **B01J 7/02**; **B01J 8/20**

IPC 8 full level

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Citation (search report)

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